SPECIFICATION AMENDMENTS

Please amend the following paragraphs in the specification as indicated.

[0003] Rotating such a large target tube in such an environment is a difficult task. Figure 1A depicts magnetron 100 for illustrative purposes. Figure 1B shows magnetron 100 integrated into a large glass coating system 130. Glass coating system 130 may be several hundred feet long and contain many magnetrons. Target tube 106 is supported by two end blocks 104 and 108 as glass sheet ~~110~~ 109 passes by. The end blocks 104 and 108 generally supply cooling water, support and rotate the target tube, support a stationary magnetic array within the rotating target tube, and transfer the large amounts of electricity needed for the sputtering process. Effectively transferring electrical power to a rotating target tube is also a complex problem. Maintaining electrical isolation in a sputtering process is also crucial to continually laying down a uniform coating on the glass. If the drive system is not properly electrically isolated from the sputtering process, it will affect the quality of coating deposited upon the glass. The sputtered material may in fact also coat the drive and electrical components of the magnetron itself rather than the glass if they are not properly isolated. Aside from resulting in a poor coating, this has many other ramifications on the continuous reliable operation of the magnetron. For further information please refer to "Coated Glass Application and Markets" by ~~Russel~~ Russell J. Hill and Steven J. Nadel, The BOC Group, 1999 (ISBN # 0-914289-01-02).

[0047] Within water spindle 320 is another spindle - anti-rotation spindle 342. Dual vacuum seals 350 are located between WEIH 304 and water spindle 320 and seal the high pressure water from the surrounding vacuum environment and vice versa. Between the two seals a water sensor determines if the first seal has been breached and triggers a status alert at the user interface. The water sensor is connected to and monitors interseal cavity port 356. Flow through water bushings 346 are located between water spindle 320 and anti-rotation spindle 342. The anti-rotation spindle 342 holds the magnetic array 364 within the target tube stationary while the water spindle 320 is rotating around it and water is flowing within and around the anti-rotation spindle 342.

[0049] Power is applied to the water spindle 320 by brush blocks 324, which then transfer the power to the target tube 362 between water end block 300 and drive endblock 200 shown in Figs 3-5. The current travels from brush blocks 324 through water spindle 320 towards the target tube 362. Brush blocks 324 are flanked on both sides by bearings so that water spindle 320 can rotate within isolation housing 304, primary housing 308 and water endblock 300.

On the outboard side (away from the target tube) is outboard bearing 347 ~~346~~ which is conventional bearing made of steel or other commonly employed material. On the inboard side (towards the target tube) of the brush blocks 324 is bearing 334. Thus the current passes by inboard bearing 334 on a path to the target tube but does not pass by outboard bearing 347 ~~346~~. Bearing 334 is a full ceramic bearing. The ceramic material has the advantage of being non-conductive, which means it will not heat up due to AC induction resulting from the current flow even though bearings 334 contact water spindle 320 in the current path from the brush blocks 324 to the target tube. The area of water spindle 320 that comes in contact with ceramic bearing 334 and water seals 350 is the most critical for bearing performance and water sealing. This area of water spindle 320 has a wear resistant, precision ground, hard chromed, and polished contact surface. This surface is created by depositing a hard chrome layer and then precision diamond lapping it. The ceramic bearing 334 is supported by bearing and seal carrier 360. Carrier 360 also supports dual vacuum seals 338 ~~354 that serve to seal the high pressure water from the surrounding environment which is maintained at a vacuum for the sputtering process~~.